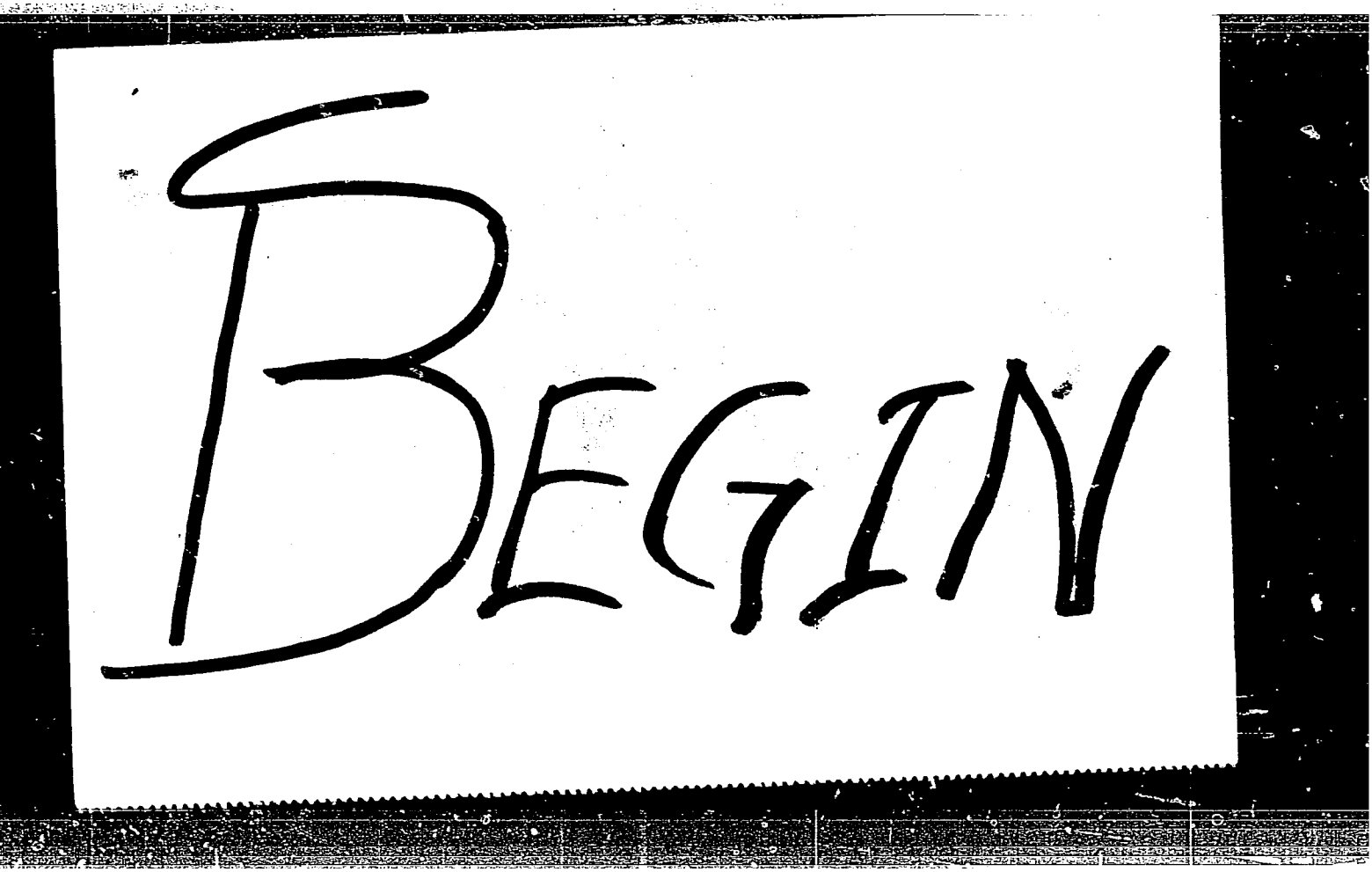

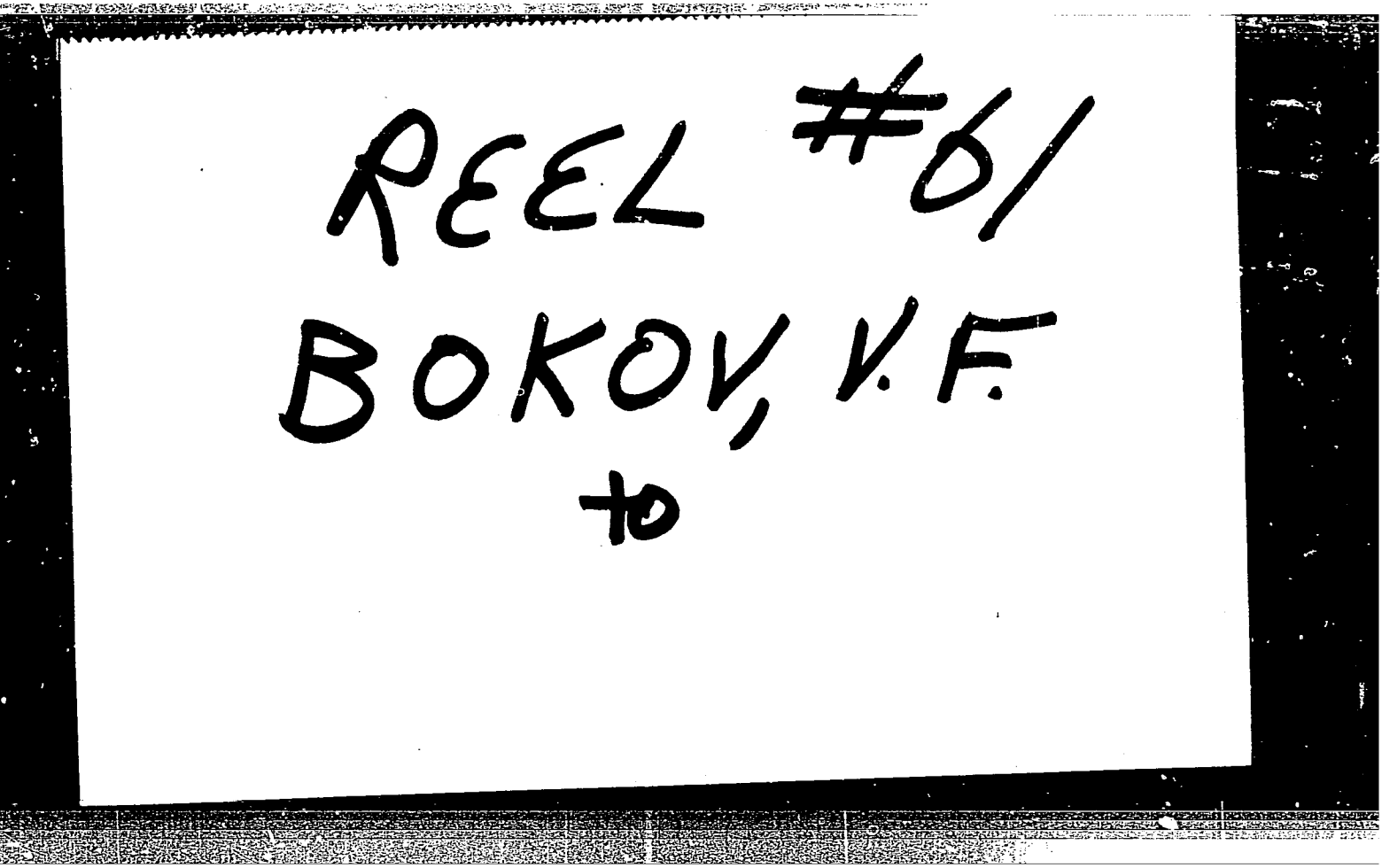

ARIFDZHANOV, K.A., kand.veterin.nauk; BOKOV, V.F., mladshiy nauchnyy sotrudnik

Azidine against piroplasmosis and Francaiella infection in cattle. Veterinariia 40 no.7:19-20 Jl '63. (MIRA 16:8)

1. Uzbekskiy nauchno-issledovatel'skiy veterinarnyy institut.
(Azidine) (Piroplasmosis) (Cattle—Diseases and pests)

BOKOV, V.I.

Apparatus for the demonstration of the topic "Electromagnetic oscillations and waves." Fiz.v shkole 13 no.5:36-41 S-O '53. (MLRA 6:8)

1. 3-ya srednyaya shkola, Pavlovo. (Electric apparatus and appliances)

BOKOV, V. M.

ZVEREV, V.A.; BOKOV, V.M.; LUR'YE, I.Ye.

Sound range capacity analyzer. Akust.zhur.1 no.3:218-220 Jl-S'55.
(MLRA 8:11)

1. Gor'kovskiy issledovatel'skiy fiziko-tekhnicheskiy institut Gor'kovskogo gosudarstvennogo universiteta.
(Sound--Measurement)

88348

S/141/59/002/05/009/026
E192/E382

9.3700

AUTHOR: Bokov, V.M.

TITLE: Interaction Between an Electron Beam and the Electromagnetic Waves in Waveguide Systems Provided with the "Bleeding" of the Accelerated Electrons

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1959, Vol 2, Nr 5, pp 730 - 740 (USSR)

ABSTRACT: An analysis of the interaction of a trochoidal electron beam moving in crossed static electric and magnetic fields with a fast electromagnetic wave is considered under the assumption that the unpropitiously phased electrons are extracted from the system. First, a two-conductor strip line, in which one of the plates is the anode while the other forms the cathode, is considered. It is necessary to determine the interaction between a trochoidal electron beam and the field of the principal TEM wave. A constant magnetic field B_o has the direction of the axis x (see Figure 2). In order to simplify the problem it is assumed that:
a) the amplitude of the alternating field

Card1/10

4

Interaction Between an Electron Beam and the Electromagnetic Waves in Waveguide Systems Provided with the "Bleeding" of the Accelerated Electrons

($E = E_y = -E_a(z) \times \sin(\omega t - hz + \varphi)$) is much smaller than the constant field E_o ;

b) the beam current I_o is small so that the effect of the space charge can be neglected;
c) the walls of the waveguide are ideally conducting;
d) the length of the system L is comparatively large so that it is possible to neglect the interaction between the beam and the wave propagating in the reverse direction;
e) the velocities of the electrons in the beam are non-relativistic.

The motion of the electrons in the plane yz can be described by:

$$\ddot{y} + \omega_H \dot{z} = \eta\left[E_o + E_a(z)\sin(\omega t - hz + \varphi)\right] \quad ;$$

$$\ddot{z} - \omega_H \dot{y} = 0 \qquad (1)$$

Card 2/10

Interaction Between an Electron Beam and the Electromagnetic Waves in Waveguide Systems Provided with the "Bleeding" of the Accelerated Electrons

where $h = \omega/v_\Phi$,

$\omega_H = \eta B_o$ - (gyro magnetic frequency), and

$\eta = |e/m|$.

Eqs (1) can be solved by the method of successive approximations, provided it is assumed that the high-frequency field is regarded as a small perturbation. The first approximation is expressed by Eqs (2), where the trochoid parameters y_o and a are determined from the initial conditions, while $v_o = E_o/B_o$. The electrons move along a circle having its centre at the point $y = y_o$ and $z = v_o t$; the radius of the circle is given by Eq (3). The change of the radius $R(z)$ depends on the input phase φ of a particle. On the other hand, the condition of the capture of the particle by the cathode

Card3/10

Interaction Between an Electron Beam and the Electromagnetic Waves in Waveguide Systems Provided with the "Bleeding" of the Accelerated Electrons

is represented by:

$$-\Theta \leq \varphi \geq +\Theta ; \quad \cos\Theta = 2\zeta E_o / \int_c^z E_a(z)dz \qquad (4)$$

where $\zeta = y_o - a$. The waves of TE type are excited by the convection component of the current which is expressed by Eq (5), where ξ_1 and ξ_2 represent the smallest and the largest distance of the trajectories from the cathode plate, while τ is the transit time of an electron (from the origin to a section having a coordinate z). The charge density ρ in Eq (5) can be written in the form of Eq (6), where $f = a/a_c$, where a is the radius of a trochoid, a_c is the radius of a cycloid corresponding to

Card4/10

Interaction Between an Electron Beam and the Electromagnetic Waves in Waveguide Systems Provided with the "Bleeding" of the Accelerated Electrons

the fields E_o and B_o, while F is the modulating function depending on the conditions of the electron bleeding. The shape of the function F is indicated in Figure 3. If F is expanded into a Fourier series and if only its first harmonic is considered, the transverse current can be expressed by Eq (7), where the integration limit is defined by Eq (8a) for the case when not all the electron layers are bled and by Eq (8b) when all the layers are subjected to the electron bleeding. If it is assumed that the current density is uniform, i.e. $j_o = 1/d_e = \text{const}$ (d_e is the thickness of the beam), Eq (7) can be written as Eq (9). The wave of the TEM-type excited by the transverse current is given by the second equation on p 734, where N_B is the parameter of the wave, h_o is the propagation constant of the system and K is the interaction impedance. The amplitude

Card5/10

Interaction Between an Electron Beam and the Electromagnetic Waves in Waveguide Systems Provided with the "Bleeding" of the Accelerated Electrons

of the high-frequency field can be expressed by:

$$E_a(z) = E_{a\ BX} \mathrm{ch}(\alpha z) \qquad (12)$$

where α is defined by Eq (11), while $E_{a\ BX}$ represents the input field. From this it is seen that the high-frequency field is in the form of a superposition of two waves having a propagation constant h_o. From Eq (12) it is seen that the gain of the system in db is expressed by:

$$G \approx 8.6\alpha L - 6 = 13.5 \sqrt{j_o Kf/E_o} N - 6 \qquad (14)$$

where N is the number of the wavelengths of the high-frequency field contained in the interaction space. The above results were obtained under the assumption that the

Card6/10

Interaction Between an Electron Beam and the Electromagnetic Waves in Waveguide Systems Provided with the "Bleeding" of the Accelerated Electrons

system operates at the resonant frequency. The effect of the detuning can be analysed by considering Eq (15). For the case of detuning, the solution of Eq (15) is in the form of Eq (16). The amplification bandwidth of the system can therefore be expressed by Eq (17), where N_e is the number of cycles of a trochoid contained in the interaction space. Since in the normal system N_e is of the order of 25 to 50, the amplification bandwidth is of the order of 2 to 1%. If the current density is given by:

$$j_o = E_o/N^2Kf \qquad (18)$$

the maximum gain of the system is about 8 db, as can be seen from Eq (19). The above is true for the case of a comparatively "thick" beam interacting with the incident TEM wave. The above gain can be increased if it is

Interaction Between an Electron Beam and the Electromagnetic Waves in Waveguide Systems Provided with the "Bleeding" of the Accelerated Electrons

assumed that the walls of the transmission line are not ideally conducting. In this case, the amplitude of the high-frequency field can be expressed by Eq (20) and the maximum gain is in the form of the second equation on p 737. If the electric field of the wave which interacts with the beam is elliptically polarised in the plane yz, the gain factor can be expressed by the third equation on p 737, where p is the ratio of the axes of the polarisation ellipse. The maximum gain is therefore given by the last equation on p 737. The above theory is based on the assumption that the high-frequency field has approximately no effect on the trajectories of the particles which take part in the energy exchange. However, at large current densities this assumption is not valid and the high-frequency field has to be evaluated from Eq (24), where $\cos \Theta$ is defined by Eq (23). Eq (24) is solved

Card 8/10

Interaction Between an Electron Beam and the Electromagnetic Waves in Waveguide Systems Provided with the "Bleeding" of the Accelerated Electrons

for $\cos \Theta = 0.4$ and it is found that the maximum output power is given by Eq (25). The length of the interaction space at which the output power is a maximum is given by Eq (26). The efficiency of the system is defined by Eq (27); for a cycloidal beam having $f = 1$, the efficiency is 57%. The above analysis has shown that the interaction of an electron beam, in crossed electric abd magnetic fields, with the electromagnetic waves in a transmission line can result in an energy exchange between the beam and the wave provided a "forced" phasing of the electrons is introduced by extracting the accelerated electrons from the interaction space. In general, this type of interaction is more effective than that in the normal travelling-wave devices, where the phasing is accomplished by the density modulation of the particles. The author expresses his gratitude to A.V. Gaponov and I.I. Antakov for valuable advice.

Card9/10

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206110001-0"

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E192/E382

Interaction Between an Electron Beam and the Electromagnetic Waves in Waveguide Systems Provided with the "Bleeding" of the Accelerated Electrons

There are 4 figures and 5 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Radiophysics Institute of Gor'kiy University)

SUBMITTED: May 17, 1959

Card 10/10

68559

9.1300

S/141/59/002/05/023/026
E041/E321

AUTHORS: Bokov, V.M. and Gaponov, A.V.

TITLE: Type "O" Interaction in Systems With Centrifugal Focusing

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1959, Vol 2, Nr 5, pp 831 - 833 (USSR)

ABSTRACT: Previous studies have dealt with interactions between an electron beam and either a longitudinal magnetic field or crossed electric and magnetic fields. Electron motion in a centrifugal electrostatic field is described by Eq (1). Using the method of perturbations the effective electric field is Eq (2) and the component vectors are Eq (3). For a sufficiently weak electron beam the resonance condition for interaction with one of the normal waves is Eq (4) and an approximate dispersion equation is Eq (5). If the conditions of Eq (3) are now satisfied the type "O" interaction in a centrifugal field is Eq (6). Two examples are now evaluated: in the first a coaxial transmission line has a negligibly small inner conductor with a positive potential with respect to the outer tube and a spiral beam interacts

Card1/2

Type "O" Interaction in Systems With Centrifugal Focusing

with the H_{11} wave; in the second, centrifugal focusing of a beam is achieved by two coaxial tubes, the inner of which is split at opposite ends of a diameter and supports the fundamental mode. There are 3 references, 2 of which are Soviet and 1 English.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Radiophysics Scientific Research Institute at Gor'kiy University)

SUBMITTED: July 16, 1959

S/141/60/003/005/012/026
E192/E382

9.4230

AUTHORS: Bokov, V.M. and Gaponov, A.V.

TITLE: Theory of a Travelling-wave Strophotron

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1960, Vol. 3, No. 5, pp. 826 - 836

TEXT: The so-called strophotron (Refs. 4, 5) is an example of a system with anharmonically excited oscillations, which employs the electrons oscillating in an electrostatic potential well along a stronguniform magnetic field. A simple model of a strophotron (described in Ref. 4) is illustrated in Fig. 1, where an oscillatory circuit can be connected to any pair of electrodes. Such a device can be used as the high-frequency oscillator or a regenerative amplifier. Another type of strophotron based on a different type of electrostatic potential well is illustrated in Fig. 2; this is a coaxial strophotron (Ref. 5). In the following the strophotrons of the above type are investigated but it is assumed that the electrons interact with a travelling electromagnetic wave. In the derivation of the

86857
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E192/E382

Theory of a Travelling-wave Strophotron

principal equations it is assumed that: the beam current is small, the length of the interaction space is comparatively large and that the interaction takes place with only one synchronous wave. The motion of an electron in a two-dimensional potential well in the presence of a constant magnetic field H_o is described by the following nonrelativistic equation:

$$\ddot{\underline{r}} = -\eta(\underline{E}_o + \underline{E}_{\sim}) - \frac{\eta}{c}\left[\dot{\underline{r}}, \underline{H}_o + H_{\sim}\right] \qquad (1)$$

where $\underline{E}_{\sim}$ and $\underline{H}_{\sim}$ are the high-frequency electric and magnetic fields, $\underline{E}_o$ is the electrostatic field having components E_{ox} and E_{oy}, e is the charge of an electron, m_o is its rest mass and $\eta = e/m_o$. If the motion along the axis z is uniform and if the high-frequency field can be

Card 2/8

S/141/60/003/005/012/026
E192/E382

Theory of a Travelling-wave Strophotron

regarded as a perturbation the solution of Eq. (1) can be in the form of:

$$\underline{r} = \underline{z}_o Z + \underline{x}_o (X + x^{(1)}), \quad |x^{(1)}| \ll |X| \qquad (2).$$

The zero approximation of the electron motion can be described by Eqs. (3), where the function E_x changes its sign at $x = 0$. The solution of the first of these equations corresponding to the real initial conditions and being a periodic function of t with a period $T_E = 2\pi/\omega_E$ is assumed to be in the form of Eq. (4). The derivative of this is given by Eq. (4.8). The equation for the first approximation is obtained by substituting Eq. (2) into Eq. (1) and is in the form of Eq. (5), where $\Phi(x) = \eta(\partial E_x/\partial x)$, and $E_{\sim}$ is the x-component of the high-frequency electric field. The general solution of this homogeneous equation should be

Card 3/8

S/141/60/003/005/012/026
E192/E382

Theory of a Travelling-wave Strophotron

in the form of Eq. (6), where $u(t)$ is a periodic function of time, C_1 and C_2 are arbitrary constants and M is the so-called parameter of non-isochronism, which is proportional to the derivative of the oscillation frequency ω_E with respect to the oscillator energy W_0. The parameter of non-isochronism M is expressed by Eq. (7). If it is assumed that the high-frequency field in the interaction space is in the form of a plane nonhomogeneous wave, the solution of Eq. (5) is approximately given by Eq. (10), where U_o is the velocity corresponding to the drift velocity v_o and V_o is the amplitude of the plane wave. On the other hand, the amplitude of the synchronous wave excited in the system by the electron beam is expressed by Eq. (11), where I_o is the beam current, N is a normalising coefficient and $\tau = z/v_o$ is the transit time of an electron

Theory of a Travelling-wave Strophotron

to the cross-section z . By substituting Eq. (10) into Eq. (11) and integrating it with respect to t , the following scattering equation is obtained:

$$\delta(\delta - \varepsilon)^2 = - C_m^3 = - \frac{I_o}{2U_o} \frac{h_e}{a_1^2 h_o^3 N} M \left| G_m \right|^2 \qquad (12)$$

where only the resonance terms of the order $\left[\delta(\delta - \eta)^2\right]^{-1}$ are considered. This equation determines the correction factors to the propagation constants $\delta h_o = h - h_o$. Eq. (12) is analogous in form to the dispersion equation of the normal travelling-wave tube of the type "O". If the relativistic effects in the tube are taken into account, the equation of the first approximation is in the form of Eq. (13), where $Y(t)$ is the solution of the zero approximation. The parameter of non-isochronism in this case is given by Eq. (14). The

Theory of a Travelling-wave Strophotron

scattering equation is now similar to Eq. (12) except that M is replaced by the expression of Eq. (14). When the electron oscillations in the potential well can be regarded as being harmonic and the parameter M is small, it is necessary to introduce the resonant components of the order $(\delta - \varepsilon)^{-1}$. In this case, the scattering equation is in the form of Eq. (15). This can further be written as Eq. (16). For strong currents, Eq. (16) is approximately expressed by Eq. (16a). This represents the so-called "M" type of oscillator systems. Such systems give the possibility of generating electromagnetic oscillations, this being due to the presence of complex roots in Eq. (16a). The amplification coefficient of such systems is determined by the imaginary component of the correction factor δ. Its dependence on current is illustrated in Fig. 4. The above formulae are used to analyse a coaxial strophotron with a travelling wave. It is shown that the gain of this system for the direct wave in the

Theory of a Travelling-wave Strophotron

absence of absorption is given by:

$$G = -9.54 + 47.3\, CL/\lambda$$

where C is defined by Eq. (18) and L is the length of the system. A graph of C as a function of a/b (Fig. 2) is given in Fig. 5. The above interaction mechanism is dependent on the self-phasing of the particles in the field. However, if the beam passes in the vicinity of the wall of a transmission line, the situation is different. The mechanism of the interaction of nonlinear beams with electromagnetic waves can be analysed on the basis of the results obtained by V.M. Bokov (Ref. 11). In this case, the first approximation can be written in the form of Eq. (19), where $\Gamma(z)$ is a slowly changing function of z . By analysing this equation it is found that for a beam with uniformly distributed current, the gain is expressed by the third equation on p. 835, where j_o is the current density.

Card 7/8

86857

S/141/60/003/005/012/026
E192/E382

Theory of a Travelling-wave Strophotron

There are 6 figures and 12 references: 3 English and 9 Soviet; one of the Soviet references is translated from English.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Radiophysics Institute of Gor'kiy University)

SUBMITTED: June 18, 1960

Card 8/8

21176
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E192/E382

9,1300 (4150 1130

AUTHORS: Antakov, I.I., Bokov, V.M., Vasil'yev, R.P. and Gaponov, A.V.

TITLE: Interaction Between a Trochoidal Electron Beam and Electromagnetic Waves in a Rectangular Waveguide

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1960, Vol. 3, No. 6, pp. 1033-1044

TEXT: A detailed analysis of the interaction between a trochoidal electron beam and electromagnetic waves in a rectangular waveguide with three ideally conducting walls and "one" impedance wall is presented. A sufficiently weak electron beam interacts effectively with one of the normal waves in a transmission line or waveguide only under the condition that $h_o(1 + \varepsilon) = h_e + mh_H$ or:

$$\omega = \frac{m\omega_H}{(1 + \varepsilon)v_{\parallel}/v_\Phi - 1} \qquad (1)$$

Card 1/6

Interaction Between ....

where $m = 0, \pm 1, \pm 2, \ldots$ $|\varepsilon| \ll 1$ and $h_0 = \omega/v_\varphi^{(0)}$ is the propagation constant of the corresponding normal wave in a "cold" waveguide; $v_{||} = E_0/B_0$ is the drift velocity of the electrons moving along a trochoid and having an oscillation amplitude a in crossed fields E_0 and B_0; $h_e = \omega/v_{||}$, $h_H = \omega_H/v_{||}$, $\omega_H = (e/m)B_0 = \eta B_0$ which is the gyromagnetic frequency. If the condition of synchronism given by Eq. (1) is fulfilled, the scattering equation for the correction of the order $\delta = (h - h_0)/h_0$ for the propagation constant of the electromagnetic wave in the waveguide for comparatively weak signals (without taking into account the space charge) is in the form (Refs. 2, 5):

$$E_y = h_n \cos(\varkappa_n x)\,\mathrm{ch}(\gamma y);\quad H_x = -\frac{k^2 - \varkappa_n^2}{kZ_0}\cos(\varkappa_n x)\,\mathrm{ch}(\gamma y); \qquad (3)$$

$$H_z = -i\frac{h_n \varkappa_n}{kZ_0}\sin(\varkappa_n x)\,\mathrm{ch}(\gamma y).$$

(3)

Card 2/6

Interaction Between ....

where I_o is the beam current,

$U_o = v_{||}^2/2\eta$ is the voltage corresponding to the drift velocity,

$\beta_\perp = v_\perp/c$ (where c is the velocity of light, $v_\perp$ is the transverse electron velocity),

G_{xp}, G_{yp}, G_{zp} are the Fourier coefficients of the high-frequency Lorenz force acting on an electron moving along a stationary trajectory in the field of a non-perturbed normal wave,

N is the normalising coefficient of this wave.

Eq. (2) is used to analyse the interaction between the H_{01}-wave in a smooth-walled rectangular wave with the electron beam and its interaction with a non-symmetrical wave in a comb-type (periodic) waveguide. The interaction between the electron beam and a symmetrical wave in a comb-type strip waveguide is also investigated; the following special cases in

Card 3/6

Interaction Between ....

the above type of interaction are considered: a magnetron amplifier with a trochoidal beam; interaction with a fast electromagnetic wave and interaction with a slow electromagnetic wave. The problem was also investigated experimentally on two specially constructed models, provided with comb-type delay systems. Such a system is illustrated in Fig. 4; this consists of: 1 - a comb-type anode; 2 - cathode; 3 - focusing electrode; 4 - electron beam and 5 - a cathode plate. Both models were designed for the 3-cm operating range. The results of the experiments are in good agreement with the calculated data and indicate that for the electrons rotating in a constant magnetic field both mechanisms of interaction of the type "0", i.e. the self-phasing and the spatial debunching, are equally effective and can be employed in microwave amplifiers and oscillators. There are 6 figures and 11 references: 10 Soviet and 1 non-Soviet.

Card 4/6

S/141/60/003/006/015/025
E192/E382

Interaction Between ....

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Radiophysics Institute of Gor'kiy University)

SUBMITTED: July 13, 1960

Card 5/6

Interaction Between ....

Fig. 4:

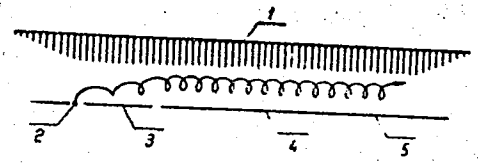


Рис. 4. Модель усилителя с гребенчатой линией замедления:
1 – гребенчатый анод, 2 — катод, 3 — фокусирующий электрод; 4 – электронный луч, 5 – катодная пластина.

Card 6/6

STEPANOV, B.I., dotsent; BOKOV, V.N., dotsent, red.

[Lectures in the course of machine parts; brief information on interchangeability, tolerances, and fits] Lektsii po kursu detalei mashin; kratkie svedeniia po vzaimozameniaemosti, dopuskam i posadkam. Moskva, M-vo vysshego obrazovaniia SSSR. Vses.zaochnyi energ.in-t, 1959. 40 p. (MIRA 13:3)
(Mechanical engineering--Study and teaching)

BOKOV, Vladimir Nikolayevich; MEN, S.A., red.; ANOSHINA, K.I., red.izd-va; GOROKHOVA, S.S., tekhn.red.

[Machine parts; lectures with systematic indications, examples of problem solutions, questions for self-examination and control problems] Detali mashin; lektsii s metodicheskimi ukazaniiami, primerami resheniia zadach, voprosami dlia samoproverki i kontrol'nymi zadaniiami. Moskva, Gos.izd-vo "Vysshaia shkola," 1960. 671 p. (MIRA 14:3)

(Mechanical engineering)

BOKOV, Vladimir Nikolayevich

[Machine parts] Detali mashin. 2. izd. Moskva, Vysshaia shkola, 1964. 623 p. (MIRA 18:2)

LOPSHITS, A.M., (Yaroslavl'); VIKSMAN, V.S. (Moskva); KARANIKOLOV, Khr. (Sofiya); BERKOLAYKO, S. (Belgorodskaya oblast'); LOKOV, Ye.A. (Krasnodarskiy kray); GABOVICH, Ya. (Tartu); SKOPETS, Z.A.(Yaroslavl'); RABINOVICH, V.L. (Petropavlovsk TSelinnogo kraya)

Problems. Mat. v shkole no.4:86 Jl-Ag '63. (MIRA 16:9)
(Mathematics—Problems, exercises, etc.)

S/081/62/000/023/096/120
B101/B186

AUTHORS: Makarov-Zemlyanskiy, B. Ya., Bokov, Yu. S., Makarov-Zemlyanskiy, Ya. Ya., Pavlov, S. A.

TITLE: Polycondensation of xylotrihydroxy glutaric acid with hexamethylene diamine

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1962, 681, abstract 23P118 (Nauchn. tr. Mosk. tekhnol. in-t legkoy prom-sti, no. 23, 1961, 35 - 43)

TEXT: The polycondensation of the salt of trihydroxy glutaric acid and hexamethylene diamine was studied at high temperatures in the melt (165 - 200°C, in the atmosphere of purified N_2) and using solvents (tricresol and xylenol) at 170 and 180°C. The kinetic curves for the polycondensation were plotted. The rate of formation of the linear polyamide (PA) was shown to be lower than that of a three-dimensional compound through interaction of the hydroxyl groups of neighboring chains. The resulting PA (molecular weight 950) was found to be unusable as film-forming agent for artificial leather. The possibility of a

Card 1/2

Polycondensation of...

S/081/62/000/023/096/120
B101/B186

combination of the resulting resin with the AK60/40 (AK60/40)-type PA in alcoholic solution was examined. Even small quantities of the resin were found to increase the hygroscopicity and the capability of swelling in water (by 10-30%), and the strength of films. [Abstracter's note: Complete translation.]

Card 2/2

BOKOV, Yu.S., mladshiy nauchnyy sotrudnik; MAKAROV-ZEMLYANSKIY, B.Ya., assistent; MAKAROV-ZEMLYANSKIY, Ya.Ya., doktor khimicheskikh nauk, prof.; PAVLOV, S.A., doktor tekhn. nauk, prof.

Interphase polycondensation of acetylized trihydroxyglutaric acid and hexamethylenediamine. Nauch. trudy MTILP no.24: 30-39 '62. (MIRA 16:7)

1. Nauchno-issledovatel'skaya laboratoriya po polucheniyu isskustvennoy kozhi i plenochnykh materialov Moskovskogo tekhnologicheskogo instituta legkoy promyshlennosti.
(Glutaric acid) (Hexandiamine)
(Condensation products (Chemistry))

BOKOV, Yu.S., mladshiy nauchnyy sotrudnik; MAKAROV-ZEMLYANSKIY, B.Ya., assistent; MAKAROV-ZEMLYANSKIY, Ya.Ya., doktor khim. nauk, prof.; PAVLOV, S.A., doktor tekhn. nauk, prof.

Obtaining mixed polyamides with the use of trihydroxyglutaric acid. Nauch. trudy MTILP no.24:40-46 '62. (MIRA 16:7)

1. Nauchno-issledovatel'skaya laboratoriya po polucheniyu iskusstvennoy kozhi i plenochnykh materialov.
(Polyamides) (Glutaric acid)
(Leather, Artificial)

BOKOV, Yu.S., mladshiy nauchnyy sotrudnik; MAKAROV-ZEMLYANSKIY, Ya.Ya., doktor khim. nauk, prof.

Acetylation of xylotrihydroxy glutaric acid. Nauch. trudy MTILP no.26:81-85 '62. (MIRA 17:5)

L 1859-66 EWT(m)/EPF(c)/T/EWA(h)/EWA(1) DS/RM

ACCESSION NR: AP5022614 UR/0190/65/007/009/1637/1640
678.01:54+678.744

AUTHOR: Belyakova, A. P.; Bokov, Yu. S.; Lavrishchev, V. P.; Konovalov, P. G.; Vaskevich, D. N.

TITLE: Photosensitivity of poly(vinyl cinnamate) and its nitro-derivatives

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 9, 1965, 1637-1640

TOPIC TAGS: polymer, photosensitivity, polyvinylcinnamate, photosensitive polymer

ABSTRACT: The purpose of this work was to clarify the effect of substituents in the monomer molecule on the photosensitivity of the polymer. Poly(vinyl cinnamate) and the o, m, and p-nitroderivatives were prepared by heating poly(vinyl alcohol) (mol. wt. 12,000, 0.72% acetate groups) in pyridine for 4 hours at 50C with cinnamyl chloride, or the appropriate nitrocinnamyl chloride. Polymer films 100 ± 10μ thick, were irradiated with ultraviolet light and their thermomechanical properties, solubilities, ultraviolet and infrared spectra were measured and compared to those of untreated films. It was found that the photosensitivity of the compounds in-

Card 1/2

L 1859-66

ACCESSION NR: AP5022614

creases in the following order: poly(vinyl cinnamate) (PVC) > o-NO_2-PVC > m-NO_2-PVC > p-NO_2-PVC. Orig. art. has: 2 figures and 2 tables. [VS]

ASSOCIATION: Vsesoyuznyy zaochnyy politekhnicheskiy institut (All-Union Correspondence Polytechnic Institute)

SUBMITTED: 29Oct64 ENCL: 00 SUB CODE: OC, OP

NO REF SOV: 007 OTHER: 005 ATD PRESS: 4017

Card 2/2

ACC NR: AP7002538 (A) SOURCE CODE: UR/0413/66/000/023/0012/0012

INVENTOR: Knyazev, N. N.; Bokov, Yu. S.; Lavrishev, V. P.; Pavlov, S. A.

ORG: none

TITLE: Preparative method for crosslinked polymer coatings. Class 8, No. 188942

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 23, 1966, 12

TOPIC TAGS: polymer coating, chlorosulfonated polyethylene, polymer crosslinking, UV irradiation

ABSTRACT:

An Author Certificate has been issued for a method of preparing crosslinked chlorosulfonated polyethylene-based polymer coatings with improved mechanical properties. The method involved application on the substrate of a chlorosulfonated polyethylene solution containing added triethylene glycol dimethacrylate and a sensitizer [unspecified], removal of the solvent by drying, and UV irradiation.

SUB CODE: 11, 07/ SUBM DATE: 17Dec64/ ATD PRESS: 5112

Card 1/1 UDC: 678.741-416-9:547.391.3'422.2

SIDOROVA, N.G.; BOKOVA, A.I.

Alkylation of benzene by optically active alcohols. Zhur. org. khim. 1 no. 12:2176-2178 D '65 (MIRA 19:1)

1. Submitted March 29, 1965.

BOKOVA, G.B. (Moskva)

Behavior of metallic thorium and some of its compounds in various media. Gig. truda i prof. zab. 4 no.1:49-50 Ja '60. (MIRA 15:3)

(THORIUM)

BOKOVA, L.B., assistent

Characteristics of blood coagulation during and after labor. Akush. i gin. 39 no.5:51-56 S-O '63. (MIRA 17:8)

1. Iz kafedry akusherstva i ginekologii (zav. - prof. A.V. Vikulov) L'vovskogo meditsinskogo instituta.

KRUGLOVA, V.G.; SIDORENKO, G.A.; BOKOVA, L.M.

Native selenium from brown coal deposits. Geol.mest.red.elem. no.11:125-132 '62. (MIRA 15:5)
(Silenium) (Lignite)

ACC NR: AT6024938 SOURCE CODE: UR/2981/66/000/004/0259/0263

AUTHOR: Bokova, L. S.; Onopriyenko, V. A.; Tikhonov, G. F.; Khromov, V. G.

ORG: none

TITLE: Rolling of aluminum powder into coiled bands with a compact edge

SOURCE: Alyuminiyevyye splavy, no. 4, 1966. Zharoprochnyye i vysokoprochnyye splavy (Heat resistant and high-strength alloys), 259-263

TOPIC TAGS: aluminum powder, powder metal compaction, metal rolling

ABSTRACT: The study had two objectives: (1) preparation of band billets no less than 10 m long and 1-1.7 mm thick from finely divided aluminum powder which are capable of being coiled up for further rolling into foil, and (2) design and construction of an attachment to the horizontal rolls of a rolling mill for the continuous rolling of aluminum powder into band billets with compact edges. APS-1 aluminum powder containing 6.7-6.9% Al_2O_3, 0.15% Fe, and 0.12% fats was employed. It is shown that band billets approximately 1 mm thick can be rolled with 180 mm rolls only by using a special attachment for controlling the thickness of the band by limiting the angle of contact between the powder and the rolls and the supply of the powder to the rolling zone. The coiling (winding on a drum with a diameter of no less than 225 mm) of band billets 0.8-1.0 mm thick rolled from aluminum powder of fractions -0.1 +0.16, -0.16 +0.1, -0.2 and less was found to be feasible. The mechanical properties of finished

Card 1/2

ACC NR: AT6024938

bands 0.1 mm thick do not depend on the initial thickness of the band billet in the 1.9-0.3 mm range. Hot rolling of the band billet with a total reduction of no less than 50% is necessary prior to the cold rolling of the band. Orig. art. has: 5 figures and 1 table.

SUB CODE: 11/ SUBM DATE: none

Card 2/2

ACCESSION NR: AP4002280 S/0139/63/000/005/0156/0165

AUTHORS: Bokova, N. A.; Semenova, O. P.; Petrova, M. V.

TITLE: Influence of atmosphere on arc discharge radiation Part III

SOURCE: IVUZ. Fizika, no. 5, 1963, 156-165

TOPIC TAGS: arc discharge radiation, low current arc discharge, nitrogen arc discharge, argon arc discharge, nitrogen argon atmosphere, arc discharge gas, arc discharge temperature, discharge cross section temperature distribution, discharge gas conductance, discharge gas thermal conductivity, discharge excitation condition, discharge gas ionization potential, nitrogen plasma thermal conductivity, arc energy balance, photographic photometry, arc discharge spectrum

ABSTRACT: The temperature distribution T(r) across a low-current arc discharge between carbon electrodes has been studied analytically and then verified experimentally. The electrodes are assumed to be in an argon or nitrogen atmosphere under 600 mm Hg pressure. The analysis consists of solving the heat balance equation

$$\sigma E^2 + \frac{1}{r}\frac{d}{dr}\left(r\varkappa\frac{dT}{dr}\right) = 0 ,$$

Card 1/2

ACCESSION NR: AP4002280

where σ and $\varkappa$ - electrical and thermal conductivities respectively are assumed to be functions of temperature. A detailed derivation is made of the thermal conductivity in argon with 5% carbon vapor mixture 4000-12 000C temperature range and nitrogen with 10% carbon vapor in 4000-8000C temperature range. The electrical conductivity is represented by $\sigma = \frac{e^2 n_e}{\sqrt{3\varkappa m_e T}} \cdot \frac{1}{n_e Q_i^e + \sum_{j=1}^{\kappa} n_{0j} Q_{0j}^e}$ where both electron-ion and electron-atom collisions are included. Experimental measurements of temperature were made in a vacuum arc chamber with the spectrograph ISP-51 and chamber UF-84. The radial distribution of I(r) from I(x) was estimated from Abel's integral. The results show good agreement with theory and predict the influence of type of gas used on T(r). Orig. art. has: 12 equations and 4 figures.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V. V. Kuyby*sheva (Siberian Physical and Technical Institute, Tomsk State University)

SUBMITTED: 13Jul62 DATE ACQ: 02Dec63 ENCL: 00

SUB CODE: PH NO REF SOV: 006. OTHER: 012

Card 2/2

24.6100 (1043 only)

S/139/60/000/005/030/031
E073/E135

AUTHORS: Popova, T.N., and Bokova, N.A.

TITLE: Excitation of Oscillations in the Electron-Oscillation Spectrum of Nitrogen in a High-Frequency Discharge

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, No. 5, pp 174-175

TEXT: This is a continuation of a series of papers on investigating the population of the oscillation levels in discharges of the nonuniform type. It was shown in earlier papers that the distribution of the molecules along the oscillation states in a low discharge obeys the exponential law $n_i = n_0 \exp -E_i/kT_{eff}$, where T_{eff} is the temperature characterising its distribution and this temperature differs both from the temperature of the electrons and the gas temperature. A similar result was obtained also for the state of CS molecules in a high-frequency electrode-free discharge. In this paper the population of the oscillation levels $C^3\Pi$ and $B^3\Pi$ molecules of N_2 in a high-frequency discharge was investigated. For the

Card 1/4

S/139/60/000/005/030/031
E073/E135

Excitation of Oscillations in the Electron-Oscillation Spectrum of Nitrogen in a High-frequency Discharge

investigation band sequences with $\Delta v = 1, -2, -3$ of the second positive system and bands of $3 \rightarrow 0$, $4 \rightarrow 1$, $5 \rightarrow 2$, $6 \rightarrow 3$, $7 \rightarrow 4$ of the first nitrogen system were chosen. The electrical circuit was the same as in earlier work (Ref. 1). The discharge was photographed by means of a spectrograph using a panchrome film for the first positive system and spectral plates for the second positive system. Most of the exposures were obtained for a gas pressure of 1 mm Hg col in the discharge tube. However, for elucidating the dependence of the effective temperature on the pressure (for the second positive system) exposures were also made for the pressure range 0.05 to 5 mm Hg col. The relative population of the oscillation levels was determined by means of a method described in an earlier paper (Ref. 2). The results have again confirmed the exponential law of the population of the oscillation levels in the excited state of the molecules. However, the effective temperature characterising this population proved different for the various systems of bands of one and the

Card 2/4

S/139/60/000/005/030/031
E073/E135

Excitation of Oscillations in the Electron-Oscillation Spectrum of Nitrogen in a High-frequency Discharge

same molecule for equal experimental conditions. For p = 1 mm Hg col an effective temperature of 11 000 ° abs. was obtained for N_2 on the basis of the bands of the first positive system, whilst a temperature of 3 500 ° abs. was obtained on the basis of the second positive system N_2. In determining the population of the oscillation levels of the $B^3\Pi$ state, the probability of transitions calculated by I. Montgomery (Ref. 3) were applied and for the state $C^3\Pi$ that calculated by A. Omholt (Ref. 4) was applied. For the same experimental conditions the electron temperature was determined optically on the basis of the lines H^{α} and H^{β} ; for p = 1 mm Hg col it proved to be 8 000 °abs. According to J. Reingold and K. Garoff (Ref. 5) the gas temperature in the discharge tube for a similar high-frequency discharge is of the order of 500 °abs. Thus, the effective temperature determined by the authors of this paper coincides neither with the temperature of the electrons nor with the gas temperature and it is different for the $B^3\Pi$ and $C^3\Pi$ states

S/139/60/000/005/030/031
E073/E135

Excitation of Oscillations in the Electron-Oscillation Spectrum of Nitrogen in a High-frequency Discharge

of the N_2 molecules. This can be explained by the differing mechanism of populating these levels.

There are 7 references: 3 Soviet and 4 English.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V. Kuybysheva (Siberian Institute of Physics and Technology at Tomsk State University imeni V.V. Kuybyshev)

SUBMITTED: December 3, 1959

Card 4/4

L 13089-65 EWT(m)/EPF(c)/EPF(n)-2/EPR/EWP(b) Pr-4/Ps-4/Pu-4 AFETR/ASD(a)-5/
BSD/ESD(gs) JD

ACCESSION NR: AP4047366 S/0139/64/000/005/0176/0178

B

AUTHORS: Bokova, N. A.; Sukhanova, G. B.

TITLE: Temperature distribution over the cross section of an arc discharge in an atmosphere of an N_2 + Ar mixture

SOURCE: IVUZ. Fizika, no. 5, 1964, 176-178

TOPIC TAGS: arc discharge, temperature distribution, thermal conductivity, electric conductivity, spectrum line, gold

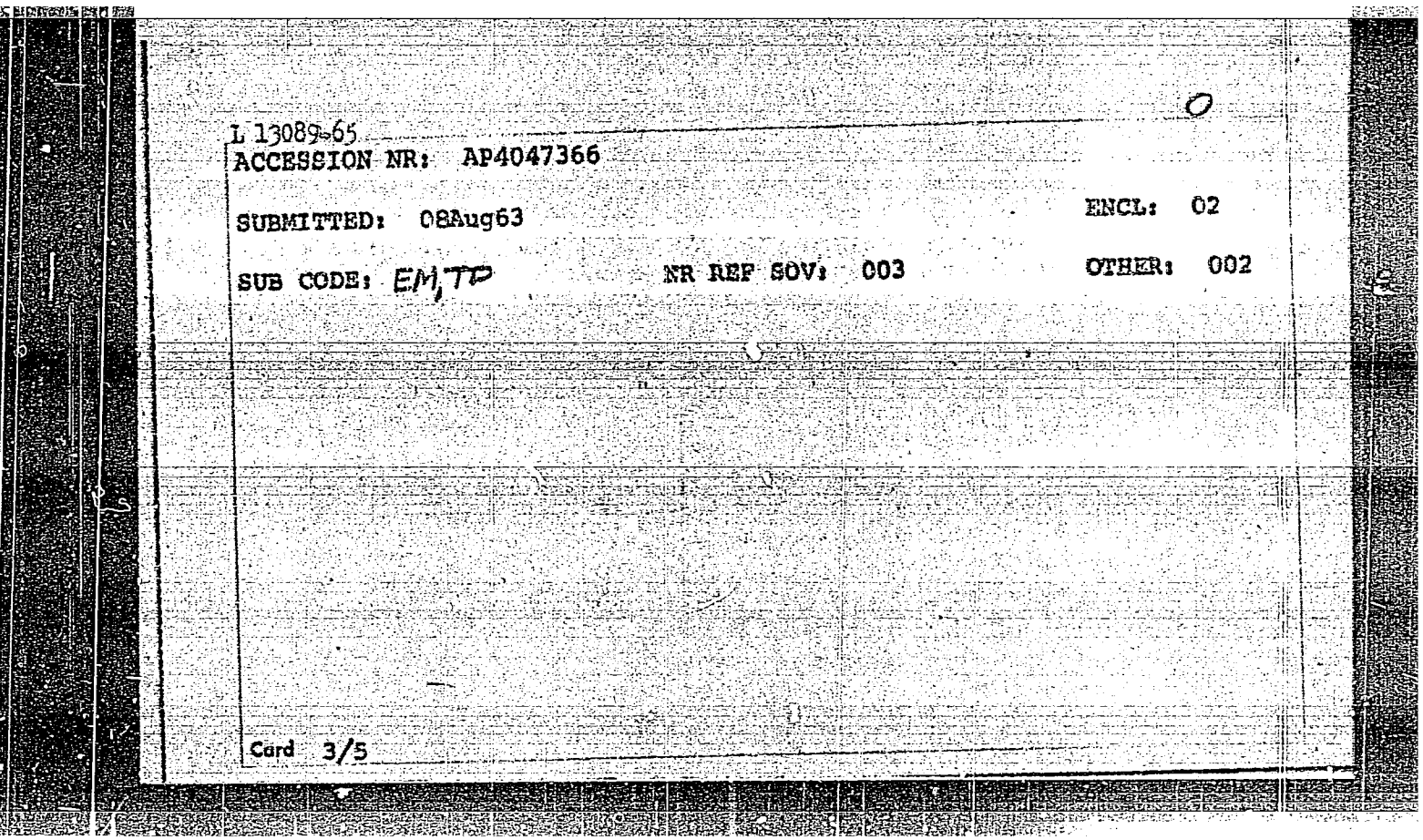
ABSTRACT: This is a continuation of early work by the authors (paper at IV Ural Conference, Sverdlovsk, 1963, in press; Izv. vuzov SSSR, Fizika No. 5, 156, 1963) in which it was shown that the temperature distribution over the cross section of a low-current carbon arc is governed by the thermal conductivity and electric conductivity of the arc gas, the main component of which is the atmosphere. In the present work the authors investigated theoretically and experimental-

Card 1/5

ACCESSION NR: AP4047366

ly the temperature distribution for a discharge in Ar + N_2 mixtures with different compositions, at a total pressure of 600 mm Hg and a current i = 10 A, and was aimed to choose a mixture ensuring a linear temperature distribution. The calculated and experimental results are shown in Figs. 1 and 2 of the enclosure, and it was found that discharge in a mixture with 96% Ar + 4% N_2 has a linear distribution T(r) in the current conducting zone. The discharge was used to determine the transition probabilities of atomic lines suitable for temperature determinations, in spectra of Fe, Mn, Cd, Co, and Au. The most suitable were the gold lines 4792.6, 5837.3, and 6278.3 Å. "In conclusion the authors thank O. P. Semenova for suggesting the topic and for guidance. Orig. art. has: 2 figures.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V. V. Kuyby*sheva (Siberian Physicotechnical Institute at the Tomsk State University)



L 13089-65

ACCESSION NR: AP4047366

SUBMITTED: 08Aug63 ENCL: 02

SUB CODE: EM, TD NR REF SOV: 003 OTHER: 002

Card 3/5

L 13089-65

ACCESSION NR: AP4017366

ENCLOSURE: 01

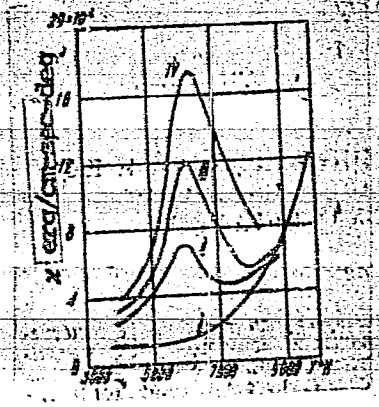


Fig. 1. Variation of thermal conductivity with temperature for pure Ar (I) and for the following mixtures: 96% Ar + 3% N_2 + 1% C_2(II); 92% Ar + 5% N_2 + 3% C_2(III); 85% Ar + 12% N_2 + 3% C_2(III)

Card 4/5

L 13089-65
ACCESSION NR: AP4047366

ENCLOSURE: 02

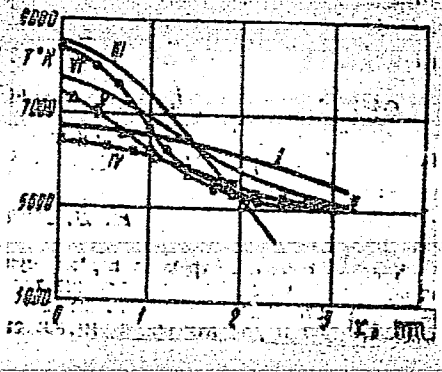


Fig. 2. Temperature distribution over the cross section of a carbon arc in an argon-neon mixture. Theoretical T(r) plot for the following mixtures: 85% Ar + 12% N_2 + 3% C_2 (I); 92% Ar + 5% N_2 + 3% C_2 (II); 96% Ar + 3% N_2 + 1% C_2 (III). Experimental T(r) plot for the mixtures: 85% Ar + 15% N_2 (IV); 96% Ar + 4% N_2 (V, VI).

Card 5/5

VASIL'YEVA, N.V.; PALETSKIY, G.V.; ALIYEV, Ya.Yu.; SULTANOV, A.S.; BOKOVA, V.I.; SAFAYEV, A.S.

Commercial production of the catalyst for the removal of sulfide impurities in the hydrofining of benzene. Uzb. khim. zhur. no.2: 73-75 '59. (MIRA 12:7)

1.Institut khimii AN UzSSR i Gosudarstvennyy Chirchikskiy elektrokhimicheskiy kombinat.
(Benzene) (Catalysts)

BOKOVA, V.V., GORR, Z.T., YEVSEYEVA, T.Ye., LISICHKINA, L.I.

Middlebrook-Dubos reaction as a new serological diagnositc method in tuberculosis. Trudy LSGMI 45:95-98 '58 (MIRA 11:11)

1. Kafedra mikrobiologii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav. kafedroy prof. M.N. Fisher).
(BLOOD--AGGLUTINATION)
(TUBERCULOSIS--DIAGNOSIS)

BOKOVA, V.I.; GORINA, G.V.

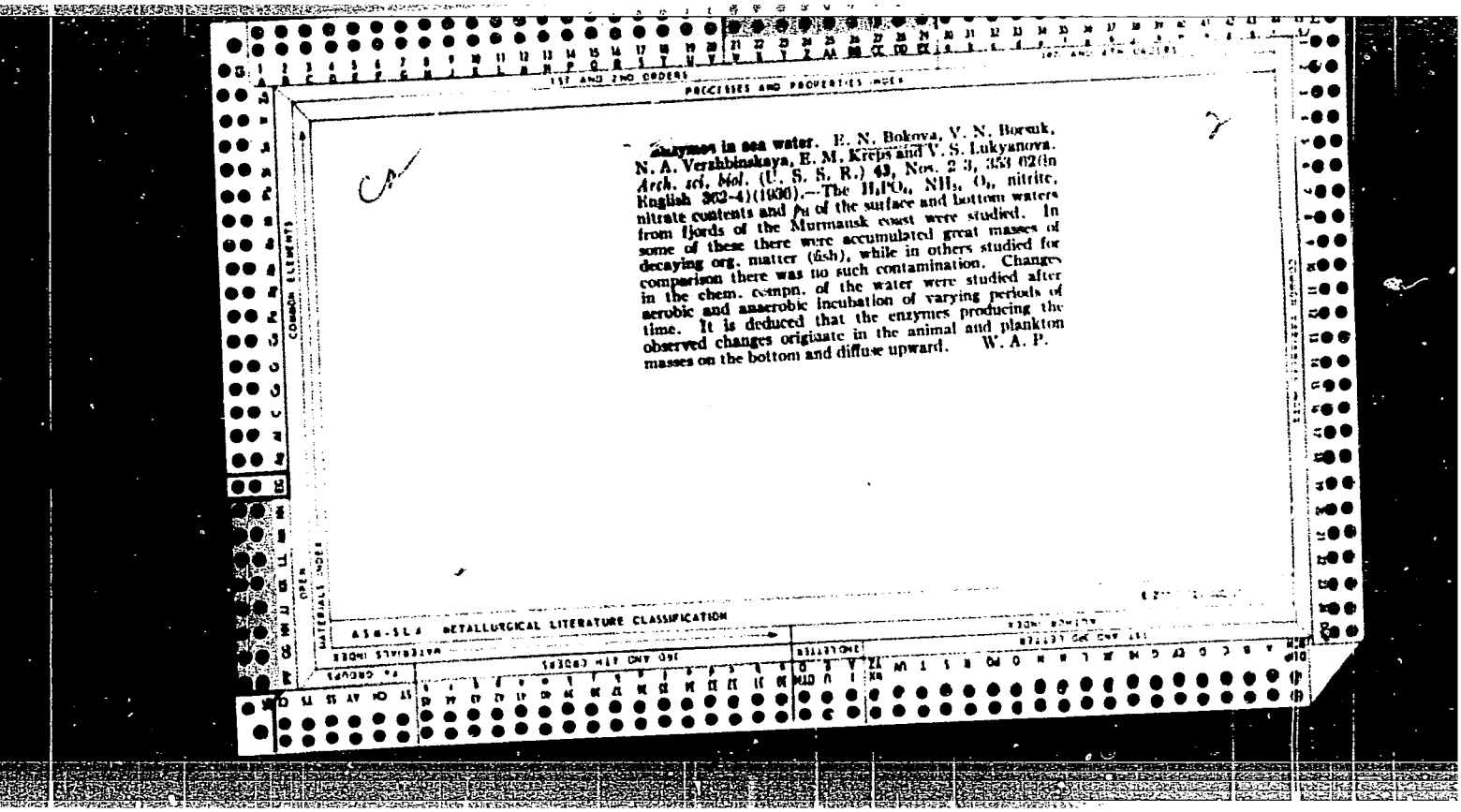
Spectral analysis of niobium chloride and technical niobium hydroxide by the condensed spark method. Zav. lab. 31 no.9:1090 '65. (MIRA 18:10)

ANDREYEV, F. (g.Saratov); TSENTSIPER, I. (g.Saratov); BOKOVA, Ye. (g.Saratov)

Machine for transporting cylinders of liquid gas. Zhil.-kom. khoz. 11 no.2:26-27 F '61. (MIRA 14:5)
(Liquified petroleum gas—Transportation)

ANDREYEV, F.G.; TSENTSIPER, I.A.; BOKOVA, Ye.M.

Tank truck for the transportation of liquefied gases.
Gaz. prom. 6 no. 1:32-35 '61. (MIRA 14:1)
(Liquefied gases—Transportation)



PROCESSES AND PROPERTIES INDEX

Enzymes in sea water. E. N. Bokova, V. N. Borsuk, N. A. Vershininskaya, E. M. Kreps and V. S. Lukyanova. *Arch. sci. biol.* (U. S. S. R.) 49, Nos. 2-3, 351-62(in English 362-4)(1939).—The H_3PO_4, NH_3, O_2, nitrite, nitrate contents and p_H of the surface and bottom waters from fjords of the Murmansk coast were studied. In some of these there were accumulated great masses of decaying org. matter (fish), while in others studied for comparison there was no such contamination. Changes in the chem. compn. of the water were studied after aerobic and anaerobic incubation of varying periods of time. It is deduced that the enzymes producing the observed changes originate in the animal and plankton masses on the bottom and diffuse upward. W. A. P.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1. BOKOVA, YE. N.

2. USSR (600)

4. Microorganisms

7. Study of the principal characteristics of the bacteria which oxidize liquid and gaseous hydrocarbons, emanating from deep strata and subterranean deposits, and an explanation of some conditions which limit their development. /Abstract/ Izv.Glav.upr.geol.fon. no. 3, 1947.

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Unclassified.

BOKOVA, E. N.

USSR/Petroleum - Prospecting Jun 47

"Oxidation of Gaseous Hydrocarbons by Bacteria as a Basis of Microbiologic Prospecting for Oil," E. N. Bokova, V. A. Kuznetsova, S. N. Kuznetsov, All-Union Office of Gas Survey, Moscow, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Discusses method and tabulates results proving that bacteria which oxidize hydrocarbons may consume methane and propane in concentrations of about 0.01 - 0.001%, found in natural subterranean atmosphere, etc.

PA 60T88

BOKOVA, Ye.N.

Nutrition of the isopod Idothea baltica (Pallas) in the Black Sea. Trudy Karad. biol.sta. no.12:40-49 '52. (MLRA 9:9)
(BLACK SEA--ISOPODA)

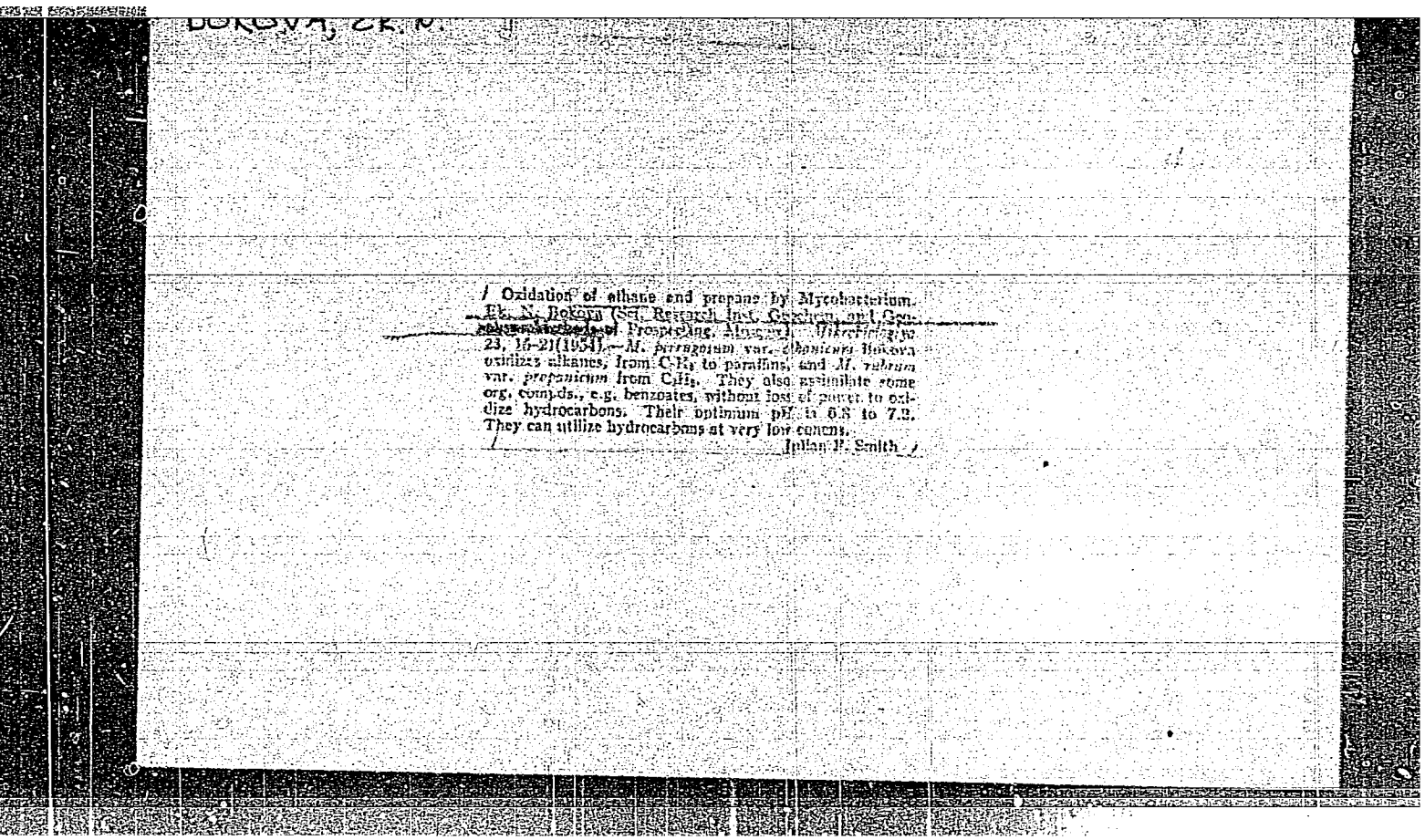
BOKOVA, Ye.N.

Method of transporting Nereis succinea. Mat. k pozn. fauny i flory SSSR. Otd. zool. no.33:366-371 '52. (MLRA 10:9)
(Caspian Sea--Polychaeta) (Azov, Sea of--Polychaeta)
(Worms--Transportation)

BOKOVA, Ye.N.

Formation of gaseous products during the biochemical decomposition of organic matter of ooze, peat, soil, and rocks. Geokhim.met. poisk.nefti i gaza no.2:59-67 '54. (MLRA 9:10)

(Gas, Natural)



BOKOVA, ZH. N.

Oxidation of ethane and propane by Mycobacterium. Zh. N. Bokova (Sci. Research Inst. Geochem. and Geophysics Methods of Prospecting, Moscow). *Mikrobiologiya* 23, 16-21(1954).—*M. parafinicum* var. *ethanicum* Bokova oxidizes alkanes, from C_2H_6 to paraffins, and *M. rubrum* var. *propanicum* from C_3H_8. They also assimilate some org. compds., e.g. benzoates, without loss of power to oxidize hydrocarbons. Their optimum pH is 6.8 to 7.2. They can utilize hydrocarbons at very low concns.

Julian P. Smith

BOKOVA, Ye.N.

Nutritional opportunities for young sardine (Clupeonella delicatula delicatula (Nordmann)) in the Azov Sea after regulation of the current. Vop.ikht.no.4:137-158 '55. (MLRA 9:6)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut morskogo rybnogo khozyaystva i okeanografii VNIRO.
(Azov, Sea of--Sardines) (Fishes--Food)

BOKOVA, Ye.N., kand.biol.nauk

Nutrition of anchovies in the Sea of Azov during different developmental stages. Trudy VNIRO 31:356-367 '55. (MLRA 11:6)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut morskogo rybnogo khozyaystva i okeanografii.
(Azov, Sea of--Anchovies) (Fishes--Food)

BOKOVA, Ye.N.

Formation of heavy gaseous hydrocarbons in anaerobic decomposition of organic substances. Geol.nefti i gaza 3 no.8: 44-47 Ag '59. (MIRA 12:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologo-razvedochnyy neftyanoy institut (VNIGNI).
(Hydrocarbons)

BOKOVA, Ye.N.

Feeding conditions of the young of commercial fishes in the eastern part of the Taganrog Gulf. Vop.ikht. no.12:107-132 '59. (MIRA 13:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut morskogo rybnogo rybnogo khozyaystva i okeanografii - VNIRO.
(Taganrog Gulf--Fishes--Food) (Larvae--Fishes)

BOKOVA, Ye.N.; GARIBYANTS, A.A.

Bacteriological laboratory method of obtaining radioactive methane from $C^{14}O_2$. Mikrobiologiia 28 no.2:272-273 Mr-Ap '59. (MIRA 12:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut.

(METHANE,
laboratory bacteriol. prod. of radioactive methane from radiocarbon-labeled carbon dioxide (Rus))
(CARBON DIOXIDE,
same)

KARPEVICH,A.F., doktor biolog.nauk; BOKOVA,Ye.N., kand.biolog. nauk.; KOROBOCHKINA,Z.S., red.; FORMALINA,Ye.A., tekhn.red.

[Methods of transporting aquatic invertebrates and fish larvae for acclimatization purposes] Metody perevozki vodnykh bezpozvonochnykh i lichinok ryb v tseliakh ikh akklimatizatsii. Moskva, 1960. 55 p.

(MIRA 14:5)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut morskogo rybnogo khozyaystva i okeanografii. 2. Vsesoyuznyy nauchnyy institut morskogo rybnogo khozyaystva i okeanografii (for Karpevich, Bokova)
(Invertebrates--Transportation) (Fishes--Transportation)

BOKOVA, Ye.N., kand.biologicheskikh nauk

Materials on the biological foundations of the acclimatization of some bottom invertebrates in the Aral Sea. Trudy VNIRO 43:225-234 '60. (MIRA 13:9)

(Aral Sea--Benthos) (Acclimatization)

KARPEVICH, A.F.; BOKOVA, Ye.N.

Transplantation of fishes and aquatic invertebrates performed in the U.S.S.R. during 1957-1959. Vop. ikht. 1 no.3:552-563 '61. (MIRA 14:11)

(Animal introduction)
(Fishes) (Invertebrates)

KARPEVICH, A.F.; BOKOVA, Ye.N.

Transplantation of fishes and aquatic invertebrates in the U.S.S.R. in 1960-1961. Vop. ikht. 3 no.2:366-395 '63. (MIRA 16:7)
(Fish introduction) (Invertebrates)

BOKOVA, Ye.N.

Evaluation of the rate of consumption of zooplankton by young fishes in the Gulf of Taganrog. Trudy VNIRO 55:89-96 '64.
(MIRA 18:4)

USSR/Pharmacology and Toxicology - Toxicology V.

Abs Jour : Ref Zhur - Biol., No 2, 1959, 9328

Author : Bokova, Ye.T.

Inst : Leningrad State Institute for the Advanced Training of Physicians, Chair of Forensic Medicine

Title : On Poisoning by Mercury Vapors.

Orig Pub : Sb. nauchn. rabot Kafedry sudebn. med. Leningr. gos. in-t usoversh. vrachey, 1957, vyp. 10, 239-243

Abstract : A case of group (39 persons) subacute poisoning by mercury vapors with severe manifestations involving the gastrointestinal tract, skin, cardiovascular system and in some cases C.N.S., as well as one case of fatal acute poisoning which developed as a result of inhalation of vapors over heated metallic mercury (with a suicidal purpose), are described. In both cases, apart form the

Card 1/2

Card 2/2

KETILADZE, Ye.S., dotsent; SOROKINA, Ye.Yu.; BOKOVA, Ye.V.; ZAKSTEL'SKAYA, L.Ya.; YAKHNO, M.A.; DREYZIN, R.S.; NISEVICH, L.L.

Parainfluenzal diseases in adults; clinical aspects and diagnosis. Sov.med. 28 no.3:53-60 Mr '65. (MIRA 18:10)

1. Klinicheskiy otdel (nauchnyy rukovoditel' - deystvitel'nyy chlen AMN SSSR prof. A.F.Bilibin; zav. - dotsent Ye.S.Ketiladze) Instituta virusologii imeni D.I.Ivanovskogo AMN SSSR (direktor - deystvitel'nyy chlen AMN SSSR prof. V.M.Zhdanov) na baze Gorodskoy klinicheskoy infektsionnoy bol'nitsy Nr. 82 (glavnyy vrach - kand. med.nauk A.V.Yeremyan), Moskva.

17(1)
AUTHORS: Kleshnin, A. F., Shul'gin, I. A., Bokovaya, M. M.

SOV/20-122-5-53/56

TITLE: On the Specific Heat Capacity and the Bound Water of Plants (Ob udel'noy teployemkosti i svyazannoy vode rasteniy)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 5, pp 940-943 (USSR)

ABSTRACT: In the present paper the results of the determinations of bound water according to the specific heat capacity of plant tissues are described. As it is known, the specific heat capacity of free water is equal to 1, those of iron, however, and of crystal water 0.5 cal/g.degree. In colloids (humus, starch, gelatin, gum arabic) the specific heat capacity decreases with the decrease of the water content in the colloid from 1 to 0.5 cal/g.degree (Refs 1-6). This fact makes possible the use of the index value in question of different states of the water as well as the elaboration of a method of determination for the various forms of water in the plant by proceeding from the additivity principle (printsip additivnosti). The authors determined the heat capacity calorimetrically in petroleum (for maize and pea

Card 1/4

seeds) or in water (leaves of various types of plants). The results obtained are given in the tables 1-4 and figures 1-3. The authors proved by these experiments that the specific heat capacity of absolutely dry maize seeds is 0.295, and that of the pea seeds 0.383 cal/g·degree (Figs 1 : 3, and 4). In the case of a high water content the specific heat capacity of the seeds increases linearly (Figs 1:1 and 2), whereas it considerably deviates from the straight line in the case of a low humidity (to 25 %). This deviation means that the average specific heat capacity of the water C_w calculated according to the formula

$$C_w = \frac{C_f - C_m (1 - W)}{W} \quad (1)$$

is not constant but changes to a high degree depending on the humidity of the seeds (Figs 1:5). From all this the authors draw the following conclusions: 1.-In the plant tissue there are at least three forms of water: a) one firmly bound (specific heat capacity = 0.5 cal/g·degree) b) one loosely bound (capacity 0.5-1 cal/g·degree) and c) free water

(1 cal/g·degree). 2.-The ratio between the firmly bound and the loosely bound water in the seeds amounts to 1:2 (Fig 2). When proceeding from the physical heterogeneity of water the additivity equation is modified taking into account the plant tissues (2). From the equation (2) the authors derive the content of the firmly bound water H and of the loosely bound water 2H, respectively:

$$H = [W + C_m (1 - W)] - C_f \qquad (3)$$

Table 1 shows the calculation results according to formula (3) for 16 types of plants. The maximum content of firmly and loosely bound water was found in the leaves of the mesophytes (32.46 %, Table 1) and of the evergreen xerophytes (24.99 %, Table 2), the minimum content was found in hygrophytes (8.61 %, Table 3) and succulents (5.76 %, Table 4). The specific heat capacity of normal living leaves also depends on the ecological group (Fig 3). Its minimum is found in xerophytes (0.709, Table 2) and its maximum in succulents (0.956 cal/g·degree, Table 4). Mesophytes and hygrophytes are in between these two (0.820, Table 1, and 0.908, Table 3).

On the Specific Heat Capacity and the Bound Water in Plants SOV/20-122-5-53/56

There are 3 figures, 4 tables, and 6 Soviet references.

ASSOCIATION: Institut fiziologii rasteniy im. K. A. Timiryazeva Akademii nauk SSSR (Institute of Plant Physiology imeni K. A. Timiryazev of the Academy of Sciences USSR)

PRESENTED: June 21, 1958, by A. L. Kursanov, Academician

SUBMITTED: June 21, 1958

Card 4/4

ACC NR: AT6030000

AUTHOR: Nilovskaya, N. T.; Bokovaya, M. M.

ORG: none

TITLE: Dependence of the gas metabolism of higher plants on the concentration of CO_2 in the atmosphere [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24-27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 289

TOPIC TAGS: plant physiology, plant ecology, plant respiration, plant metabolism, photosynthesis, closed ecological system, life support system

ABSTRACT:

A study was made of the effect of various concentrations of CO_2 in air on the intensity of photosynthesis and respiration of vegetable-bearing plants. During the experiments, the gas exchange of several plants placed in a sealed chamber was constantly registered. Chamber temperature varied from 20 to 26° C, and humidity from 80 to 90%. An incandescent lamp supplied 300 watts/m^2. The plants were grown hydroponically.

Card 1/2

ACC NR: AT6030[illegible]

Photosynthetic saturation concentrations for CO_2 varied for the 12 different kinds of plants tested, and ranged from 0.15 to 0.35%. When optimal concentrations of CO_2 were maintained automatically in the ambient medium, the intensity of photosynthesis was 1.5 to 3 times as great as for the controls (0.03% CO_2). When CO_2 concentrations were permitted to exceed 2%, the assimilation of CO_2 by plants was significantly reduced.

[W. A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 2/2

ACC NR: AT6036467 SOURCE CODE: UR/0000/66/000/000/0012/0013

AUTHOR: Agre, A. L.; Nilovskaya, N. T.; Tsitovich, S. I. Bokovaya, M. M. 36
Varlamov, V. F.; Chernovich, I. L. 37+1

ORG: none

TITLE: Experimental investigation of the possibility of cultivating higher plants on a nutrient medium of biological mineralizers under conditions of a closed gas cycle (Paper presented at conference on problems of space medicine held in Moscow from 24-27 May 1966)

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 12-13

TOPIC TAGS: life support system, closed ecological system, plant physiology, photosynthesis, plant metabolism

ABSTRACT:

The creation of a closed cycle of substances for experimental ecological systems is unthinkable without a stage of recycling human metabolic wastes, in order to transform organic substances into elements for mineral feeding of lower and higher autotrophs.

Card 1/3

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ACC NR: AT6036467

One of the possible and promising methods of mineralizing human metabolic wastes is to use aerobic oxidation of organic materials with the aid of biocenosis of microorganisms, carried out in a biological mineralization chamber. At the present time, the aeration tank (aerotank) as a biological mineralization chamber is highly developed from the point of view of both engineering and construction and is quite useful for conducting experiments with short closed cycles.

In these experiments (the very first), two linked but contradictory processes were utilized. The first process was the synthesis of organic compounds from inorganic ones using the energy of light (photosynthesis of higher plants). The second process was the biochemical oxidation of organic substances (mineralization of the urine and fecal mixture in the aeration chamber).

Higher plants (head cabbage) were grown for a period of twelve days in an open assimilation chamber on a urine-fecal liquid which had been mineralized biologically. After this, they were grown under conditions of a closed exchange of a gas-air mixture between the assimilation chamber and the aeration tank for periods of four and eleven days.

During the process of biological mineralization, a certain amount of CO_2 gas was extracted from the aeration tank and allowed to pass into the assimilation chamber with the higher plants. In turn, oxygen which had been produced by the plants passed into the aeration tank. These experiments with the "assimilation chamber-aeration tank" system made it possible to establish a practical gas exchange between higher plants and the biocenosis of mineralizing microorganisms. The experiments also established the possibility of using a mineralized urine-fecal liquid as a nutrient medium for higher plants. In the course of these experiments a somewhat lowered photosynthetic rate was observed. It is assumed that this can be explained by the action of some kind of gaseous micro-admixtures which are metabolites of plants and of activated sludge.

Experimentation with short closed cycles of the "assimilation chamber-aeration tank" type showed th.. they are practical for obtaining information necessary for the creation of closed ecological system.

[W.A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 3/3 egh

BYKOV, V.D., red.; ZVONKOVA, T.V., red.; GLADKOV, N.A., red.; KOVALEV, S.A., red.; KOSOV, B.F., red.; MARKOV, K.K., red.; RYABCHIKOV, A.M., red.; SAUSHKIN, Yu.G., red.; SIMONOV, Yu.G., red.; KHRUSHCHEV, A.T., red.; BOKOVETSKIY, O.D., red.; KONOVALYUK, I.K., mladshiy red.; GOLITSYN, A.V., red.kart; KOSHELEVA, S.M., tekhn. red.

[Soviet geography during the period of the building of communism] Sovetskaia geografiia v period stroitel'stva kommunizma. Moskva, Geografgiz, 1963. 486 p. (MIRA 16:10)

(Geography)

BOKOVIKOV, B.A.

137-1958-3-4739

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 39 (USSR)

AUTHORS: Privalov, S. I., Timofeyev, V. N., Bokovikov, B.A.

TITLE: Reduction of Ore in a Layer (Vosstanovleniye rudy v sloye)

PERIODICAL: Vses. n.-i. in-t metallurg. teplotekhn. Byul. nauchno-tekhn. inform., 1957, Nr 2, pp 96-112

ABSTRACT: A study of the reduction process (RP) of ore in a stationary layer. In contrast to the blast furnace process, the RP in the laboratory setup was not stationary. Ore-bearing spherical briquets (8 to 10 mm in diameter) prepared from Vysokogorsk iron concentrate containing 62.4 - 62.9 percent Fe, were charged in amounts of 1.33 - 1.45 kg (a layer 160 mm high) into a cylindrical reaction container 80 mm in diameter and 312 mm high. A gas composed of 0.4 - 0.8 percent CO_2, 30-33 percent CO, and 0.2 - 0.8 percent H_2, with a humidity up to 0.05 percent, was heated to 750°, 800°, 850°, and 900°, and then passed through the container at velocities ranging from 0.25 m/sec to 1.1 m/sec. Samples of gas were withdrawn from every 40-mm section of the layer; the temperature was controlled by means of thermocouples located near the base of the upper and lower

Card 1/2

Reduction of Ore in a Layer

layers. By analyzing the gas samples, the degree of reduction, φ, was computed by the following formula: $\varphi = (S\, V \Delta CO_2 \cdot d\tau)/ /G_{O_2}$, where V is the gas consumption per unit of time, τ is the time, and G_{O_2} is the O_2 content of ore. At all temperatures the RP increases with increasing gas-flow velocities and decreases with increasing degree of reduction. It was discovered that in the RP, the briquets (particularly those made of pure Fe_2O_3) undergo a growth in volume (swelling), especially at the higher temperatures. A summary coefficient of the RP of ore in a layer, K ($cm^3/cm^2 sec$) representing a rate of speed, is defined, and methods for its determination are given. It is pointed out that the magnitude of K decreases significantly with increasing φ, and that it increases continuously and almost linearly as a function of increasing temperatures and velocities of the gases (in the temperature range between 750° and 910°).

L. Kh.

Card 2/2

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SOV/133-60-1-3/30

AUTHORS: Privalov, S. I. (Candidate of Technical Sciences), Timofeyev, V. N. (Candidate of Technical Sciences), and Bokovikov, B. A. (Engineer)

TITLE: Investigation of Reduction Process in Ore Bed

PERIODICAL: Stal', 1960, Nr 1, pp 5-14 (USSR)

ABSTRACT: The article discusses an experimental investigation (on the fire model) of the reduction process in the immobile ore bed, and a development of speed characteristics for analytical calculations of the process under conditions of a "counter flow" of ore and gas. The work was undertaken in connection with growing intensification and coming automation of blast furnace work. The authors mention the work of B. I. Kitayev (B. I. Kitayev, Yu. G. Yaroshenko, et al., The Development of Heat Exchange and Reduction Processes in the Counter Flow, Transactions of UPI imeni Kirov, 1951; B. I. Kitayev, Stal', 1954, Nr 8) who was the

Card 1/11

first to consider the development of the reduction process along the height of blast furnace by analogy with heat exchange processes in connection with similarity of the phenomena of damping of the temperature and concentration potential of gas. The early American experiment with the Mesabi Range ores (W. Wetherill, C. Furnas, Industrial and Engineering Chemistry, 1934, 26, Nr 9); the mathematical analysis of A. P. Yem, who worked under the direction of S. T. Rostovtsev on the kinetics of the process of reduction of ore grains by hydrogen; the work of A. N. Ramm and Yu. P. Svintsov (A. N. Ramm and Yu. P. Svintsov, Study of Reduction of Iron Ores by Gases Under the Conditions of Counter Flow of Ore and Gases, Transactions LPI imeni Kalinina, issue 179, 1955) and of B. Stal' khano (Study of the Process of Reduction in the Lump of Iron Ore, Domez, 1931, Nr 6, A review) are referred to. The authors derive an equation for the summary coefficient of the speed of process K_{Σ}:

$$K_{\Sigma} = \frac{V_r}{2(1+K)fFH} \ln \frac{CO' - K CO_2'}{CO'' - K CO_2''}, \quad (7)$$

where K_{Σ} = a summary coefficient of speed of reduction representing an average speed (cm^3/sec) of removal of oxygen through one cm^2 of external surface of ore lumps; V_r = amount of gas passing through the layer (cm^3/sec); K = averaged constant of equilibrium of reduction reactions; f = external surface of ore lumps in unit of layer volume (cm^2/cm^3); F = cross section of layer (cm^2); CO', CO_2', CO'', CO''_2 = concentrations in incoming gas; H = total height of layer in cm. In 1954 the All-Union Scientific Research Institute of Metallurgical Technology (VNIIMT) built an experimental installation with fire model of the immobile ore bed for study of the dynamics of reduction processes. In 1958 VNIIMT built a second experimental installation

(with fire model) of the "counter flow" of ore and gas for evaluation of the effect of charge movement and for the development of reduction calculation methods in the "counter flow" (see Fig. 13).